I claim

1. A pharmaceutical composition comprising substantially optically pure enantiomer (S,S) s-adenosylmethionine or a defined non-racemic ratio of (S, S) -s-adenosylmethionine : (R,S)- s-adenosylmethionine, their pharmaceutically acceptable salts and a pharmaceutically acceptable carrier

2. A pharmaceutical composition as described in claim 1 wherein the defined non-racemic ratio of (S,S)-s-adenosylmethionine : (R,S)-s-adenosylmethionine is about 80% to about 100% : about 20% to about 0% by weight respectively.

3. A pharmaceutical composition as described in claim 1 wherein the defined non-racemic ratio of (S,S) s-adenosylmethionine : (R,S)-s-adenosylmethionine is about 95 % to about 100% : about 5% to about 0% by weight respectively.

4. A pharmaceutical composition as described in claim 1 wherein the pharmaceutically acceptable salt for each enantiomer is selected from the group consisting of : a lipophilic salt of S-adenosyl-L-methionine(SAM) of the formula SAM.sup.n+ [R--CO--NH--(CH.sub.2).sub.2 --SO.sup.-.sub.3 ].sub.n in which R-CO is a member selected from the group consisting of C.sub.12-C.sub.26 saturated and unsaturated, linear and branched acyl and C.sub.12 -C.sub.26 cycloalkyl-substituted acyl, and n is an integer from 3 to 6 according to the SAM charge ; double salts corresponding to the formula SAM.sup.+.HSO.sub.4.sup.-.H.sub.2 SO.sub.4 .2 CH.sub.3 C.sub.6 H.sub.4 SO.sub.3 H. ; salts (S, S) -s-adenosylmethionine with sulphonic acids selected from the group consisting of methanesulphonic, ethanesulphonic, 1-n-dodecanesulphonic, 1-n-octadecanesulphonic, 2-chloroethanesulphonic, 2-bromoethanesulphonic, 2-hydroxyethanesulphonic, 3-hydroxypropanesulphonic, d-,1-,d,1-10-camphorsulphonic, d-,1-,d,1-3-bromocamphor-10-sulphonic, cysteic, benzenesulphonic,p-

chlorobenzenesulphonic, 2-mesitylbenzenesulphonic, 4-biphenylsulphonic, 1-naphthalenesulphonic, 2-naphthalenesulphonic, 5-sulphosalicylic, p-acetylbenzenesulphonic, 1,2-ethanedisulphonic, methanesulphonic acid, ethanesulphonic acid, 1-n-dodecanesulphonic acid, 1-n-octadecanesulphonic acid, 2-chloroethanesulphonic acid, 2-bromoethanesulphonic acid,2-hydroxyethanesulphonic acid, d-,l-,d,l-10-camphorsulphonic acid, d-,l-,d,l-3-bromocamphor-10-sulphonic acid, cysteic acid , benzenesulphonic acid, 3-hydroxypropanesulphonic acid, 2-mesitylbenzenesulphonic acid, p-chlorobenzenesulphonic acid,4-biphenylsulphonic acid, 2-naphthalenesulphonic acid, 5-sulphosalicylic acid, 1,2-ethanedisulphonic acid, p-acetylbenzenesulphonic acid, 1-naphthalenesulphonic acid, o-benzenedisulphonic and chondroitinesulphuric acids, and double salts of said acids with sulphuric acid; S-adenosyl-L-methionine or a pharmaceutically acceptable salt thereof and an effective amount of a lithium salt selected from the group consisting of lithium chloride, lithium bromide, lithium iodide, lithium sulfate, lithium nitrate, lithium phosphate, lithium borate, lithium carbonate, lithium formate, lithium acetate, lithium citrate, lithium succinate and lithium benzoate; water-soluble salt of a bivalent or trivalent metal is a member selected from the group consisting of calcium chloride, ferric chloride, magnesium chloride, and magnesium sulfate; the salt of S-adenosyl-L-methionine is a member selected from the group consisting of salts of S-adenosyl-L-methionine with hydrochloric acid, sulfuric acid, p-toluenesulfonic acid, phosphoric acid, formic acid, acetic acid, citric acid, tartaric acid, and maleic acid; and a double salt of S-adenosyl-L-methionine with said acids; a salt of S-adenosyl-L-methionine and a water-soluble polyanionic substance selected from the group consisting of a polyphosphate, metaphosphate, polystyrene sulfonate, polyvinyl sulfonate, polyvinyl sulfate, polyvinyl phosphate, and polyacrylate wherein the stoichiometric ratio of mols of S-adenosyl-L-methionine to gram-equivalent of the polyanionic substance is from 0.1:1 to 0.5; a salt of S-adenosyl-L-methionine wherein the polyanionic substance is a polyphosphate, para-polystyrene sulfonate or metaphosphate; a salt of the general formula: SAM-

e.nR(O).sub.m (SO.sub.3 H)p (I) where m can be zero or 1; n is 1.5 when p is 2, and is 3 when p is 1; R is chosen from the group consisting of alkyl, phenylalkyl and carboxyalkyl, in which the linear or branched alkyl chain contains from 8 to 18 carbon atoms, and in particular for producing SAM-e salts of sulphonic acids, or of sulphuric acid esters, or of dioctylsulphosuccinic acid;

5. A pharmaceutical composition as described in claim 1 wherein the pharmaceutically acceptable salt for each enantiomer is selected from the group consisting of bisulfate; tri-p-toluenesulfonate; chloride, carbonate, bicarbonate, bromide, chloride, iodide, hydrochloride.

6. A pharmaceutical composition as described in claim 1 wherein the pharmaceutically acceptable salt for each enantiomer is selected from the group consisting of double and single salts of S-adenosyl-L-methionine with sulphuric acid and p-toluenesulphonic acid.

7. A pharmaceutical composition as described in claim 1 wherein the pharmaceutically acceptable salt for each enantiomer is 1,4 butane disulfonate.

8. A method of claim 1 wherein the composition of claim 1 is administered to a warm-blooded animal to treat a condition of lowered s-adenosylmethionine levels by increasing s-adenosylmethionine levels, comprising administering to an animal in need thereof an effective amount of the composition of claim 1.

9. The method of claim 8 wherein the condition to be treated is selected from the group consisting of: ageing, ageing of the skin, Alzheimer's disease, osteoarthritis, rheumatoid arthritis, cancer, conditions of hypomethylation, mitochondrial diseases, hypomethylation of DNA and RNA, HIV/AIDS, anxiety, attention deficit disorder and

ADHD, sleep dysregulation, organ preservation, dyslipidemias, excess sebum production, migraines, bile dysfunction, bile dysfunction caused by pregnancy and use of contraceptive medications, depression, acute and chronic liver disease, alcohol liver disease, hepatitis B and C, cirrhosis of the liver, ischemic reperfusion injury, strokes, Parkinson's disease, MS, memory disturbances, impaired memory, memory loss, pancreatitis, intrahepatic cholestasis, inflammation, pain, side effects of administration of chemotherapy, total parenteral nutrition induced liver disease, increased levels of tumor necrosis factor alpha, seborrhea, dermatitis, peripheral occlusive arterial disease, low glutathione levels, administration of neuroleptic drugs, administration of cyclosporin A, asthma, alcohol withdrawal.

10. The method of claim 8 wherein the condition to be prevented is selected from the group consisting of: ageing, ageing of the skin, Alzheimer's disease, osteoarthritis, rheumatoid arthritis, cancer, conditions of hypomethylation, mitochondrial diseases, hypomethylation of DNA and RNA, HIV/AIDS, anxiety, attention deficit disorder and ADHD, sleep dysregulation, organ preservation, dyslipidemias, excess sebum production, migraines, bile dysfunction, bile dysfunction caused by pregnancy and use of contraceptive medications, depression, acute and chronic liver disease, alcohol liver disease, hepatitis B and C, cirrhosis of the liver, ischemic reperfusion injury, strokes, Parkinson's disease, MS, memory disturbances, impaired memory, memory loss, pancreatitis, intrahepatic cholestasis, inflammation, pain, side effects of administration of chemotherapy, total parenteral nutrition induced liver disease, increased levels of tumor necrosis factor alpha, seborrhea, dermatitis, peripheral occlusive arterial disease, low glutathione levels, administration of neuroleptic drugs, administration of cyclosporin A, asthma, alcohol withdrawal.

11. The method of claim 8 wherein the route of administration of the composition is chosen from the group consisting of topically, systemically, orally, intranasally, rectally, transdermally,

12. The method of claim 8 wherein the composition can be administered together with another drug selected from the group consisting of levodopa, cyclosporin A, ibuprofen, aspirin, methotrexate, a neuroleptic, vitamin B, folic acid

13. A method of claim 1 wherein the composition of claim 1 is administered to a warm-blooded animal to treat a condition of lowered anti-oxidant levels by increasing said antioxidant levels comprising administering to an animal in need thereof an effective amount of the composition of claim 1.